

October 14, 2004

### Conceptual Cost Estimate Summary

## Summary of Option, Segment Numbers

Segment Number							PROJECT TOTALS with OPTIONS		
Tyee Creek Option	Kapho Mtn. Option	Duck Point Option					SEGMENTS 1A with 2 thru 5	SEGMENTS 1B with 2 thru 5	SEGMENTS 1C with 2 thru 5
Segment 1			Segment 2	Segment 3	Segment 4	Segment 5			
Option A	Option B	Option C	2	3	4	5			
3.29	4.94	8.02	3.49	5.55	8.73	6.41	27.47	29.12	32.20
\$692,677	\$1,724,615	\$6,514,614	\$785,008	\$1,703,805	\$2,581,850	\$1,864,121	\$7,627,460	\$8,659,399	\$13,449,397
\$1,075,322	\$5,781,332	\$53,629,904	\$2,166,216	\$12,353,989	\$8,967,575	\$4,878,201	\$29,441,303	\$34,147,312	\$81,995,884
\$464,500	\$547,000	\$701,000	\$474,723	\$577,277	\$736,316	\$620,335	\$2,873,151	\$2,955,651	\$3,109,651
\$786,020	\$1,063,780	\$1,820,540	\$794,220	\$1,254,920	\$1,944,620	\$1,386,940	\$6,166,720	\$6,444,480	\$7,201,240
\$0	\$0	\$0	\$0	\$0	\$0	\$75,030,000	\$75,030,000	\$75,030,000	\$75,030,000
\$4,031,500	\$10,201,000	\$17,162,800	\$3,946,000	\$3,217,000	\$15,735,000	\$3,926,000	\$30,855,500	\$37,025,000	\$43,986,800
\$1,997,725	\$2,130,775	\$2,383,630	\$2,014,931	\$2,186,138	\$2,190,723	\$1,877,676	\$10,267,194	\$10,400,244	\$10,653,099
\$113,700	\$939,000	\$283,106	\$149,834	\$676,366	\$996,790	\$447,201	\$2,383,890	\$3,209,190	\$2,553,296
\$9,161,444	\$22,387,502	\$82,495,593	\$10,330,932	\$21,969,496	\$33,152,873	\$90,030,473	\$164,645,218	\$177,871,275	\$237,979,367
\$2,290,361	\$5,596,875	\$20,623,898	\$2,582,733	\$5,492,374	\$8,288,218	\$22,507,618	\$41,161,304	\$44,467,819	\$59,494,842
\$11,451,806	\$27,984,377	\$103,119,492	\$12,913,664	\$27,461,870	\$41,441,091	\$112,538,092	\$205,806,522	\$222,339,094	\$297,474,209
\$916,144	\$2,238,750	\$8,249,559	\$1,033,093	\$2,196,950	\$3,315,287	\$9,003,047	\$16,464,522	\$17,787,128	\$23,797,937
\$572,590	\$1,399,219	\$5,155,975	\$645,683	\$1,373,093	\$2,072,055	\$1,687,830	\$6,351,251	\$7,177,880	\$10,934,635
\$916,144	\$2,238,750	\$8,249,559	\$1,033,093	\$2,196,950	\$3,315,287	\$4,501,247	\$11,962,722	\$13,285,328	\$19,296,137
\$13,856,685	\$33,861,097	\$124,774,585	\$15,625,534	\$33,228,862	\$50,143,720	\$127,730,216	\$240,585,017	\$260,589,429	\$351,502,917

NOTE:

Segment 5 - EIS and Design Engineering Costs have been proportionately reduced to reflect the lower costs associated with the tunnel. The following formulas have been applied.

$$\text{EIS} - 5\% (\$119,678,062 \text{ Const. Cost} - [\$75,030,000 \text{ Tunnel Cost} \times 1.25 \text{ Contingency Factor}]) + (1\% \times \$75,030,000 \text{ Tunnel Cost}) = \$2,044,828$$

Design -  $8\% (\$119,678,062 \text{ Const. Cost} - \$75,030,000 \text{ Tunnel Cost} \times 1.25 \text{ Contingency Factor}) + (4\% \times \$75,030,000 \text{ Tunnel Cost}) = \$5,072,445$

Segment Number 1:		Option A - Begin at Sta. 88+00, on the concrete dock at the outlet of Tyee Creek and beginning of existing road. The route continues northeasterly along the existing road, past the Tyee Power facilities and ends beyond the East Fork of the Bradfield River at Sta. 261+46.28.			
		LIMITS:	STA.	88+00.00	261+46.28
		LENGTH:	3.29	Mile	
ITEM NO.	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT COST	AMOUNT
DIVISION 1	<b>MOBILIZATION</b>				
	Mobilization (9% of Construction Value)	1	LS	\$692,677	\$692,677
				<b>SUBTOTAL</b>	<b>\$692,677</b>
DIVISION 2	<b>EARTHWORK</b>				
	Erosion Control (4% of Construction Value)	1	LS	\$307,856	\$307,856
	Clearing and Grubbing	29.9	ACRE	\$3,500	\$104,650
	Roadway Excavation incl Haul	29,752	CY	\$8.00	\$238,016
	Subexcavation	53,100	CY	\$8.00	\$424,800
				<b>SUBTOTAL</b>	<b>\$1,075,322</b>
DIVISION 3	<b>UTILITIES &amp; RELOCATIONS</b>				
	Utilities ( Power and Water Allowance)	3.3	Mile	\$50,000	\$164,500
	Right of Way & Building Relocation	1	LS	\$300,000	\$300,000
				<b>SUBTOTAL</b>	<b>\$464,500</b>
DIVISION 4	<b>BASES &amp; PAVEMENT</b>				
	4" Asphalt Concrete Pavement	4,186	CY	\$80.00	\$334,880
	5" Crushed Agg.	7,890	CY	\$20.00	\$157,800
	8" Select Material	14,667	CY	\$20.00	\$293,340
				<b>SUBTOTAL</b>	<b>\$786,020</b>
DIVISION 5	<b>TUNNEL</b>				
	Tunnel (excludes paving and drainage)		LF	\$9,150	
				<b>SUBTOTAL</b>	
DIVISION 6	<b>STRUCTURES</b>				
	Bridge Structure - Low Complexity		SF	\$150	
	Bridge Structure - Medium Complexity	4,800	SF	\$200	\$960,000
	Bridge Structure - High Complexity	9,780	SF	\$275	\$2,689,500
	Culverts -				
	> 10 foot diameter	1	EA	\$60,000	\$60,000
	Fish Passage Pipe	300	LF	\$900	\$270,000
	Revetment Wall (Class V Riprap)	1,300	CY	\$40	\$52,000
	MSE Wall		SF	\$30	
				<b>SUBTOTAL</b>	<b>\$4,031,500</b>
DIVISION 7	<b>INCIDENTAL CONSTRUCTION</b>				
	Wetland Mitigation - Allowance	20.0	Acre	\$25,000	\$500,000
	Cultural Resource Mitigation - Allowance	5	LS	\$10,000	\$50,000
	Drainage - Allowance	3.3	Mile	\$80,000	\$263,200
	Stormwater Management Ponds	5	LS	\$206,000	\$1,030,000
	Seeding and Landscaping	18.1	Acre	\$250	\$4,525
	Staging Area Rehabilitation	3	Acre	\$50,000	\$150,000
				<b>SUBTOTAL</b>	<b>\$1,997,725</b>
DIVISION 8	<b>ROADWAY FINISHES</b>				
	Guard Rail	300	LF	\$50	\$15,000
	Roadway Signage - Allowance	3.3	Mile	\$5,000	\$16,450
	Pavement Stripping and Markings - Allowance	3.3	Mile	\$25,000	\$82,250
				<b>SUBTOTAL</b>	<b>\$113,700</b>
<b>SUBTOTAL ROADWAY, TUNNEL, AND BRIDGE WORK</b>					<b>\$9,161,444</b>

	<b>Segment Number 1</b>	<b>Option B</b> - Begin at the first deep water access southeast of the Kapho Mountains and continue on the northerly side of the Bradfield River to the proposed bridge crossing and to Sta. 260+00 of Segment 2.			
		LIMITS:	Stationing	10+00.00	270+63.38
		LENGTH:	4.94	Mile	
ITEM NO.	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT COST	AMOUNT
DIVISION 1	<b>MOBILIZATION</b>				
	Mobilization (9% of Construction Value)	1	LS	\$1,724,615	\$1,724,615
				<b>SUBTOTAL</b>	<b>\$1,724,615</b>
DIVISION 2	<b>EARTHWORK</b>				
	Erosion Control (4% of Construction Value)	1	LS	\$766,496	\$766,496
	Clearing and Grubbing	44.6	Acre	\$3,500	\$156,100
	Roadway Excavation incl Haul	566,567	CY	\$8.00	\$4,532,536
	Subexcavation	17,400	CY	\$8.00	\$139,200
	Access Road	0.9	Mile	\$200,000.00	\$187,000
				<b>SUBTOTAL</b>	<b>\$5,781,332</b>
DIVISION 3	<b>UTILITIES &amp; RELOCATIONS</b>				
	Utilities ( Power and Water Allowance)	4.9	Mile	\$50,000	\$247,000
	Right of Way & Building Relocation	1	LS	\$300,000	\$300,000
				<b>SUBTOTAL</b>	<b>\$547,000</b>
DIVISION 4	<b>BASES &amp; PAVEMENT</b>				
	4" Asphalt Concrete Pavement	5668	CY	\$80.00	\$453,440
	5" Crushed Agg.	10678	CY	\$20.00	\$213,560
	8" Select Material	19839	CY	\$20.00	\$396,780
				<b>SUBTOTAL</b>	<b>\$1,063,780</b>
DIVISION 5	<b>TUNNEL</b>				
	Tunnel (excludes paving and drainage)		LF	\$9,150	
				<b>SUBTOTAL</b>	
DIVISION 6	<b>STRUCTURES</b>				
	Bridge Structure - Low Complexity	6000	SF	\$150	\$900,000
	Bridge Structure - Medium Complexity	6750	SF	\$200	\$1,350,000
	Bridge Structure - High Complexity	12000	SF	\$275	\$3,300,000
	Culverts -				
	> 10 foot diameter	2	EA	\$60,000	\$120,000
	Fish Passage Pipe		LF	\$900	
	Revetment Wall (Class V Riprap)	22000	CY	\$40	\$880,000
	MSE Wall	121700	SF	\$30	\$3,651,000
				<b>SUBTOTAL</b>	<b>\$10,201,000</b>
DIVISION 7	<b>INCIDENTAL CONSTRUCTION</b>				
	Wetland Mitigation - Allowance	20.0	Acre	\$25,000	\$500,000
	Cultural Resource Mitigation - Allowance	5	LS	\$10,000	\$50,000
	Drainage - Allowance	4.9	Mile	\$80,000	\$395,200
	Stormwater Management Ponds	5	LS	\$206,000	\$1,030,000
	Seeding and Landscaping	22.3	Acre	\$250	\$5,575
	Staging Area Rehabilitation	3	Acre	\$50,000	\$150,000
				<b>SUBTOTAL</b>	<b>\$2,130,775</b>
DIVISION 8	<b>ROADWAY FINISHES</b>				
	Guard Rail	15,840	LF	\$50	\$792,000
	Roadway Signage - Allowance	4.9	Mile	\$5,000	\$24,500
	Pavement Stripping and Markings - Allowance	4.9	Mile	\$25,000	\$122,500
				<b>SUBTOTAL</b>	<b>\$939,000</b>
	<b>SUBTOTAL ROADWAY, TUNNEL, AND BRIDGE WORK</b>				<b>\$22,387,502</b>

Note:	<b>Segment Number 1</b>  <b>All quantities and unit costs are based on a conceptual alignment drawn on a topographic map. Unit costs and quantities are estimated and not based on a geometric design.</b>	<b>Option C -</b> Begin at the base of Duck Point and traverse Northeasterly parallel to the Tyee Powerline. The route continues northwesterly past the Tyee Power facilities and ends beyond the East Fork of the Bradfield River.			
		LIMITS:	Mileposts: 0.00 8.02		
		LENGTH:	8.02 Mile		
ITEM NO.	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT COST	AMOUNT
DIVISION 1	<b>MOBILIZATION</b> Mobilization (9% of Construction Value)	1	LS	\$6,514,614	\$6,514,614
				<b>SUBTOTAL</b>	<b>\$6,514,614</b>
DIVISION 2	<b>EARTHWORK</b> Erosion Control (4% of Construction Value) Clearing and Grubbing Roadway Excavation incl Haul Subexcavation	1 8.0 8.0 8.0	LS Mile Mile Mile	\$2,895,384 \$36,000 \$6,200,000.00 \$90,000.00	\$2,895,384 \$288,720 \$49,724,000 \$721,800
				<b>SUBTOTAL</b>	<b>\$53,629,904</b>
DIVISION 3	<b>UTILITIES &amp; RELOCATIONS</b> Utilities ( Power and Water Allowance) Right of Way & Building Relocation	8.0 1	Mile LS	\$50,000 \$300,000	\$401,000 \$300,000
				<b>SUBTOTAL</b>	<b>\$701,000</b>
DIVISION 4	<b>BASES &amp; PAVEMENT</b> 4" Asphalt Concrete Pavement 5" Crushed Agg. 8" Select Material	8.0 8.0 8.0	Mile Mile Mile	\$97,000 \$45,000 \$85,000	\$777,940 \$360,900 \$681,700
					<b>\$1,820,540</b>
DIVISION 5	<b>TUNNEL</b> Tunnel (excludes paving and drainage)		LF	\$9,150	
				<b>SUBTOTAL</b>	
DIVISION 6	<b>STRUCTURES</b> Bridge Structure - Low Complexity Bridge Structure - Medium Complexity Bridge Structure - High Complexity Culverts - > 10 foot diameter Fish Passage Pipe Revetment Wall (Class V Riprap) MSE Wall	8.0 8.0 8.0 8.0 8.0 8.0 8.0	Mile Mile Mile Mile Mile Mile Mile	\$180,000 \$275,000 \$675,000 \$60,000 \$90,000 \$110,000 \$750,000	\$1,443,600 \$2,205,500 \$5,413,500 \$481,200 \$721,800 \$882,200 \$6,015,000
				<b>SUBTOTAL</b>	<b>\$17,162,800</b>
DIVISION 7	<b>INCIDENTAL CONSTRUCTION</b> Wetland Mitigation - Allowance Cultural Resource Mitigation - Allowance Drainage - Allowance Stormwater Management Ponds Seeding and Landscaping Staging Area Rehabilitation	20.0 5 8.0 5 8.0 3	Acre LS Mile LS Mile Acre	\$25,000 \$10,000 \$80,000 \$206,000 \$1,500 \$50,000	\$500,000 \$50,000 \$641,600 \$1,030,000 \$12,030 \$150,000
				<b>SUBTOTAL</b>	<b>\$2,383,630</b>
DIVISION 8	<b>ROADWAY FINISHES</b> Guard Rail Roadway Signage - Allowance Pavement Stripping and Markings - Allowance	8.0 8.0 8.0	Mile Mile Mile	\$5,300 \$5,000 \$25,000	\$42,506 \$40,100 \$200,500
				<b>SUBTOTAL</b>	<b>\$283,106</b>
<b>SUBTOTAL ROADWAY, TUNNEL, AND BRIDGE WORK</b>					<b>\$82,495,593</b>

Segment Number 2:					
		LIMITS:	STA.	260+00.00	444+50.71
		LENGTH:	3.49	Mile	
ITEM NO.	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT COST	AMOUNT
DIVISION 1	<b>MOBILIZATION</b> Mobilization (9% of Construction Value)	1	LS	\$785,008	\$785,008
				<b>SUBTOTAL</b>	<b>\$785,008</b>
DIVISION 2	<b>EARTHWORK</b> Erosion Control (4% of Construction Value)	1	LS	\$348,892	\$348,892
	Clearing and Grubbing	35.0	ACRE	\$3,500	\$122,500
	Roadway Excavation incl Haul	119,753	CY	\$8.00	\$958,024
	Subexcavation	92,100	CY	\$8.00	\$736,800
				<b>SUBTOTAL</b>	<b>\$2,166,216</b>
DIVISION 3	<b>UTILITIES &amp; RELOCATIONS</b> Utilities ( Power and Water Allowance)	3.5	Mile	\$50,000	\$174,723
	Right of Way & Building Relocation	1	LS	\$300,000	\$300,000
				<b>SUBTOTAL</b>	<b>\$474,723</b>
DIVISION 4	<b>BASES &amp; PAVEMENT</b> 4" Asphalt Concrete Pavement	4,232	CY	\$80	\$338,560
	5" Crushed Agg.	7,977	CY	\$20	\$159,540
	8" Select Material	14,806	CY	\$20	\$296,120
				<b>SUBTOTAL</b>	<b>\$794,220</b>
DIVISION 5	<b>TUNNEL</b> Tunnel (excludes paving and drainage)		LF	\$9,150	
				<b>SUBTOTAL</b>	
DIVISION 6	<b>STRUCTURES</b> Bridge Structure - Low Complexity		SF	\$150	
	Bridge Structure - Medium Complexity	6,000	SF	\$200	\$1,200,000
	Bridge Structure - High Complexity		SF	\$275	
	Culverts -				
	> 10 foot diameter		EA	\$60,000	
	Fish Passage Pipe		LF	\$900	
	Revetment Wall (Class V Riprap)	43,900	CY	\$40	\$1,756,000
	MSE Wall	33,000	SF	\$30	\$990,000
				<b>SUBTOTAL</b>	<b>\$3,946,000</b>
DIVISION 7	<b>INCIDENTAL CONSTRUCTION</b> Wetland Mitigation - Allowance	20.0	Acre	\$25,000	\$500,000
	Cultural Resource Mitigation - Allowance	5	LS	\$10,000	\$50,000
	Drainage - Allowance	3.5	Mile	\$80,000	\$279,556
	Stormwater Management Ponds	5	LS	\$206,000	\$1,030,000
	Seeding and Landscaping	21.5	Acre	\$250	\$5,375
	Staging Area Rehabilitation	3	Acre	\$50,000	\$150,000
				<b>SUBTOTAL</b>	<b>\$2,014,931</b>
DIVISION 8	<b>ROADWAY FINISHES</b> Guard Rail	900	LF	\$50	\$45,000
	Roadway Signage - Allowance	3.5	Mile	\$5,000	\$17,472
	Pavement Stripping and Markings - Allowance	3.5	Mile	\$25,000	\$87,361
				<b>SUBTOTAL</b>	<b>\$149,834</b>
	<b>SUBTOTAL ROADWAY, TUNNEL, AND BRIDGE WORK</b>				<b>\$10,330,932</b>

Segment Number 3:					
		LIMITS:	STA.	444+50.00	737+30.47
		LENGTH:	5.55	Mile	
ITEM NO.	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT COST	AMOUNT
DIVISION 1	<b>MOBILIZATION</b> Mobilization (9% of Construction Value)	1	LS	\$1,703,805	\$1,703,805
				<b>SUBTOTAL</b>	<b>\$1,703,805</b>
DIVISION 2	<b>EARTHWORK</b> Erosion Control (4% of Construction Value)	1	LS	\$757,247	\$757,247
	Clearing and Grubbing	74.5	ACRE	\$3,500	\$260,750
	Roadway Excavation incl Haul	1,373,899	CY	\$8.00	\$10,991,192
	Subexcavation	43,100	CY	\$8.00	\$344,800
				<b>SUBTOTAL</b>	<b>\$12,353,989</b>
DIVISION 3	<b>UTILITIES &amp; RELOCATIONS</b> Utilities ( Power and Water Allowance)	5.5	Mile	\$50,000	\$277,277
	Right of Way & Building Relocation	1	LS	\$300,000	\$300,000
				<b>SUBTOTAL</b>	<b>\$577,277</b>
DIVISION 4	<b>BASES &amp; PAVEMENT</b> 4" Asphalt Concrete Pavement	6,695	CY	\$80	\$535,600
	5" Crushed Agg.	12,580	CY	\$20	\$251,600
	8" Select Material	23,386	CY	\$20	\$467,720
				<b>SUBTOTAL</b>	<b>\$1,254,920</b>
DIVISION 5	<b>TUNNEL</b> Tunnel (excludes paving and drainage)		LF	\$9,150	
				<b>SUBTOTAL</b>	
DIVISION 6	<b>STRUCTURES</b> Bridge Structure - Low Complexity		SF	\$150	
	Bridge Structure - Medium Complexity	6,000	SF	\$200	\$1,200,000
	Bridge Structure - High Complexity		SF	\$275	
	Culverts -				
	> 10 foot diameter	3	EA	\$60,000	\$180,000
	Fish Passage Pipe		LF	\$900	
	Revetment Wall (Class V Riprap)	8,800	CY	\$40	\$352,000
	MSE Wall	49,500	SF	\$30	\$1,485,000
				<b>SUBTOTAL</b>	<b>\$3,217,000</b>
DIVISION 7	<b>INCIDENTAL CONSTRUCTION</b> Wetland Mitigation - Allowance	20.0	Acre	\$25,000	\$500,000
	Cultural Resource Mitigation - Allowance	5	LS	\$10,000	\$50,000
	Drainage - Allowance	5.5	Mile	\$80,000	\$443,643
	Stormwater Management Ponds	5	LS	\$206,000	\$1,030,000
	Seeding and Landscaping	50.0	Acre	\$250	\$12,495
	Staging Area Rehabilitation	3	Acre	\$50,000	\$150,000
				<b>SUBTOTAL</b>	<b>\$2,186,138</b>
DIVISION 8	<b>ROADWAY FINISHES</b> Guard Rail	10,200	LF	\$50	\$510,000
	Roadway Signage - Allowance	5.5	Mile	\$5,000	\$27,728
	Pavement Stripping and Markings - Allowance	5.5	Mile	\$25,000	\$138,639
				<b>SUBTOTAL</b>	<b>\$676,366</b>
	<b>SUBTOTAL ROADWAY, TUNNEL, AND BRIDGE WORK</b>				<b>\$21,969,496</b>

Segment Number 4:					
		LIMITS:	STA. 740+00.00 1200+74.96		
		LENGTH:	8.73 Mile		
ITEM NO.	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT COST	AMOUNT
DIVISION 1	<b>MOBILIZATION</b> Mobilization (9% of Construction Value)	1	LS	\$2,581,850	\$2,581,850
				<b>SUBTOTAL</b>	<b>\$2,581,850</b>
DIVISION 2	<b>EARTHWORK</b> Erosion Control (4% of Construction Value)	1	LS	\$1,147,489	\$1,147,489
	Clearing and Grubbing	88.9	ACRE	\$3,500	\$311,150
	Roadway Excavation incl Haul	922,217	CY	\$8.00	\$7,377,736
	Subexcavation	16,400	CY	\$8.00	\$131,200
				<b>SUBTOTAL</b>	<b>\$8,967,575</b>
DIVISION 3	<b>UTILITIES &amp; RELOCATIONS</b> Utilities ( Power and Water Allowance)	8.7	Mile	\$50,000	\$436,316
	Right of Way & Building Relocation	1	LS	\$300,000	\$300,000
				<b>SUBTOTAL</b>	<b>\$736,316</b>
DIVISION 4	<b>BASES &amp; PAVEMENT</b> 4" Asphalt Concrete Pavement	10,379	CY	\$80	\$830,320
	5" Crushed Agg.	19,458	CY	\$20	\$389,160
	8" Select Material	36,257	CY	\$20	\$725,140
				<b>SUBTOTAL</b>	<b>\$1,944,620</b>
DIVISION 5	<b>TUNNEL</b> Tunnel (excludes paving and drainage)		LF	\$9,150	
				<b>SUBTOTAL</b>	
DIVISION 6	<b>STRUCTURES</b> Bridge Structure - Low Complexity	6,000	SF	\$150	\$900,000
	Bridge Structure - Medium Complexity	24,600	SF	\$200	\$4,920,000
	Bridge Structure - High Complexity	15,000	SF	\$275	\$4,125,000
	Culverts -				
	> 10 foot diameter		EA	\$60,000	
	Fish Passage Pipe		LF	\$900	
	Revetment Wall (Class V Riprap)	24,600	CY	\$40	\$984,000
	MSE Wall	160,200	SF	\$30	\$4,806,000
				<b>SUBTOTAL</b>	<b>\$15,735,000</b>
DIVISION 7	<b>INCIDENTAL CONSTRUCTION</b> Wetland Mitigation - Allowance	10.0	Acre	\$25,000	\$250,000
	Cultural Resource Mitigation - Allowance	5	LS	\$10,000	\$50,000
	Drainage - Allowance	8.7	Mile	\$80,000	\$698,105
	Stormwater Management Ponds	5	LS	\$206,000	\$1,030,000
	Seeding and Landscaping	50.5	Acre	\$250	\$12,618
	Staging Area Rehabilitation	3	Acre	\$50,000	\$150,000
				<b>SUBTOTAL</b>	<b>\$2,190,723</b>
DIVISION 8	<b>ROADWAY FINISHES</b> Guard Rail	14,700	LF	\$50	\$735,000
	Roadway Signage - Allowance	8.7	Mile	\$5,000	\$43,632
	Pavement Stripping and Markings - Allowance	8.7	Mile	\$25,000	\$218,158
				<b>SUBTOTAL</b>	<b>\$996,790</b>
	<b>SUBTOTAL ROADWAY, TUNNEL, AND BRIDGE WORK</b>				<b>\$33,152,873</b>

Segment Number 5:					
		LIMITS:	STA. 1200+00.00 1538+27.37		
		LENGTH:	6.41 Mile		
ITEM NO.	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT COST	AMOUNT
DIVISION 1	<b>MOBILIZATION</b> Mobilization (9% of Construction Value) ***Tunnel Mobilization costs are included in Tunnel Unit Cost	1	LS	\$1,864,121 <b>SUBTOTAL</b>	\$1,864,121 <b>\$1,864,121</b>
DIVISION 2	<b>EARTHWORK</b> Erosion Control (4% of Construction Value) Clearing and Grubbing Roadway Excavation incl Haul Subexcavation	1 56.9 122,187 41,800	LS ACRE CY CY	\$3,367,155 \$3,500 \$8.00 \$8.00 <b>SUBTOTAL</b>	\$3,367,155 \$199,150 \$977,496 \$334,400 <b>\$4,878,201</b>
DIVISION 3	<b>UTILITIES &amp; RELOCATIONS</b> Utilities ( Power and Water Allowance) Right of Way & Building Relocation	6.4 1	Mile LS	\$50,000 \$300,000 <b>SUBTOTAL</b>	\$320,335 \$300,000 <b>\$620,335</b>
DIVISION 4	<b>BASES &amp; PAVEMENT</b> 4" Asphalt Concrete Pavement 5" Crushed Agg. 8" Select Material	8,540 14,444 20,743	CY CY CY	\$80 \$20 \$20 <b>SUBTOTAL</b>	\$683,200 \$288,880 \$414,860 <b>\$1,386,940</b>
DIVISION 5	<b>TUNNEL</b> Tunnel (excludes paving and drainage)	8,200	LF	\$9,150 <b>SUBTOTAL</b>	\$75,030,000 <b>\$75,030,000</b>
DIVISION 6	<b>STRUCTURES</b> Bridge Structure - Low Complexity Bridge Structure - Medium Complexity Bridge Structure - High Complexity Culverts - > 10 foot diameter Fish Passage Pipe Revetment Wall (Class V Riprap) MSE Wall	  16,050  2  14,900	  SF SF SF EA LF CY SF	  \$150 \$200 \$275 \$60,000 \$900 \$40 \$30 <b>SUBTOTAL</b>	  \$3,210,000  \$120,000  \$596,000  <b>\$3,926,000</b>
DIVISION 7	<b>INCIDENTAL CONSTRUCTION</b> Wetland Mitigation - Allowance Cultural Resource Mitigation - Allowance Drainage - Allowance Stormwater Management Ponds Seeding and Landscaping Staging Area Rehabilitation	5.0 5 6.4 5 40.6 3	Acre LS Mile LS Acre Acre	\$25,000 \$10,000 \$80,000 \$206,000 \$250 \$50,000 <b>SUBTOTAL</b>	\$125,000 \$50,000 \$512,536 \$1,030,000 \$10,140 \$150,000 <b>\$1,877,676</b>
DIVISION 8	<b>ROADWAY FINISHES</b> Guard Rail Roadway Signage - Allowance Pavement Stripping and Markings - Allowance	5,100 6.4 6.4	LF Mile Mile	\$50 \$5,000 \$25,000 <b>SUBTOTAL</b>	\$255,000 \$32,033 \$160,167 <b>\$447,201</b>
<b>SUBTOTAL ROADWAY, TUNNEL, AND BRIDGE WORK</b>					<b>\$90,030,473</b>



Coffman Cove Schedule B, 2003				Engineers Estimate		SE Road Builders		Kiewitt Pacific Co.		Secon	
Item #	Item Unit	Description	Quantity	Unit Price	Amount	Unit Price	Amount	Unit Price	Amount	Unit Price	Amount
15101	LPSM	Mobilization	all	\$1,447,000	\$1,447,000	\$2,017,998	\$2,017,998	\$1,600,000	\$1,600,000	\$2,130,000	\$2,130,000
Total bid estimate					\$17,527,699	\$20,374,701		\$20,749,772		\$21,713,815	
Mobilization percentage					9.0%	11.0%		8.4%		10.9%	

Mobilization is usually 9% to 10%

For all Segments **Say** **9%**

Mobilization for tunnel is included in Tunnel Unit Costs (See Final Tunnel Report - Sheet 2 of Cost Estimate Summary Option 1, dated 11/30/04 )

For Segment 5 **Say** **\$1,864,121**

Coffman Cove Schedule B, 2003				Engineers Estimate		SE Road Builders		Kiewitt Pacific Co.		Secon	
Item #	Item Unit	Description	Quantity	Unit Price	Amount	Unit Price	Amount	Unit Price	Amount	Unit Price	Amount
15703	m	Silt fence	6,000	\$11.00	\$66,000.00	\$5.00	\$30,000.00	\$11.00	\$66,000.00	\$6.00	\$36,000.00
15705	m	Slope drains	110	\$40.00	\$4,400.00	\$47.00	\$5,170.00	\$30.00	\$3,300.00	\$60.00	\$6,600.00
15707 A	m	Temporary 600 millimeter culvert pipe	380.0	\$100.00	\$38,000.00	\$60.00	\$22,800.00	\$150.00	\$57,000.00	\$150.00	\$57,000.00
15707 B	m	Temporary 900 millimeter culvert pipe	70.0	\$125.00	\$8,750.00	\$70.00	\$4,900.00	\$205.00	\$14,350.00	\$200.00	\$14,000.00
15708	each	bales, straw	150	\$30.00	\$4,500.00	\$50.00	\$7,500.00	\$14.00	\$2,100.00	\$30.00	\$4,500.00
15709 A	each	check dams, riprap	170	\$75.00	\$12,750.00	\$68.00	\$11,560.00	\$100.00	\$17,000.00	\$100.00	\$17,000.00
15709 B	each	check dams, sandbag	140	\$75.00	\$10,500.00	\$25.50	\$3,570.00	\$130.00	\$18,200.00	\$20.00	\$2,800.00
15718 A	m	diversion channel, plastic lined	500	\$55.00	\$27,500.00	\$30.00	\$15,000.00	\$7.00	\$3,500.00	\$40.00	\$20,000.00
15718 B	m	diversion channel, riprap lined	220	\$70.00	\$15,400.00	\$50.00	\$11,000.00	\$27.00	\$5,940.00	\$120.00	\$26,400.00
15724	m	wattle, straw	3,100	\$25.00	\$77,500.00	\$10.42	\$32,302.00	\$9.00	\$27,900.00	\$7.00	\$21,700.00
15729	slry unit	soil stabilization	600.00	\$250.00	\$150,000.00	\$320.61	\$192,366.00	\$525.00	\$315,000.00	\$400.00	\$240,000.00
15749	m	turbidity curtain	60	\$120.00	\$7,200.00	\$112.00	\$6,720.00	\$50.00	\$3,000.00	\$150.00	\$9,000.00
15761	each	chitosan gel sock	10	\$625.00	\$6,250.00	\$403.00	\$4,030.00	\$1,000.00	\$10,000.00	\$1,250.00	\$12,500.00
15780	day	erosion control supervisor	450	\$300.00	\$135,000.00	\$565.50	\$254,475.00	\$100.00	\$45,000.00	\$500.00	\$225,000.00
15801	m <sup>3</sup>	watering for dust control	15,000	\$5.00	\$75,000.00	\$5.51	\$82,650.00	\$5.00	\$75,000.00	\$6.00	\$90,000.00
20410	m	furrow ditches	1,600	\$3.00	\$4,800.00	\$3.96	\$6,336.00	\$10.00	\$16,000.00	\$2.00	\$3,200.00
25107	m	riprap lined ditch	1,800	\$25.00	\$45,000.00	\$19.73	\$35,514.00	\$15.00	\$27,000.00	\$30.00	\$54,000.00
62204	hour	pump, water, trash, 150 mm	200	\$20.00	\$4,000.00	\$50.00	\$10,000.00	\$20.00	\$4,000.00	\$60.00	\$12,000.00
62901	m <sup>2</sup>	Erosion control mat type 1	1,700	\$3.00	\$5,100.00	\$3.23	\$5,491.00	\$8.00	\$13,600.00	\$2.00	\$3,400.00
				\$697,650.00		\$741,384.00		\$723,890.00		\$855,100.00	
Total construction bid											
				\$17,527,699		\$20,374,701		\$20,749,772		\$21,713,815	
Erosion control ratio based on bid prices				4.0%		3.6%		3.5%		3.9%	
Total length				(km)		15.785		15.785		15.785	
				(mile)		9.8		9.8		9.8	
Erosion control costs based on km				(per km)		\$44,197		\$45,859		\$54,172	
Erosion control costs based on mile				(per mile)		\$71,140		\$73,815		\$87,195	

Say

\$7,500 per mile

Say

4% of Construction costs

CLEARING & GRUBBING ACRE

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Coffman Cove Schedule B, 2003				Engineers Estimate		SE Road Builders		Kiewitt Pacific Co.		Secon	
Item #	Item Unit	Description	Quantity	Unit Price	Amount	Unit Price	Amount	Unit Price	Amount	Unit Price	Amount
20101	ha	clearing and grubbing	50.000	\$7,000.00	\$350,000.00	\$8,482.50	\$424,125.00	\$15,000.00	\$750,000.00	\$6,000.00	\$300,000.00

(Common price in bid tabs)

Coffman Cove (1)

Ave. Units Total

\$8,000 46.173 ha \$369,384

114 A

\$3,240 per A

Say **\$3,500** per A

QUANTITIES

		STATIONING		QUANTITY	UNIT	SOURCE
Segment	1 A	88+00	261+46	29.9	A	clear.clr dated 4/7/04
Segment	1 B	10+00	270+63	44.6	A	See below
Segment	1 C	MP 0.00	MP 8.02	86.6	A/M	See below
Segment	2	260+00	444+51	35	A	clear.clr dated 4/7/04
Segment	3	444+50	737+30	74.5	A	clear.clr dated 7/7/04
Segment	4	740+00	1200+75	88.9	A	clear.clr dated 4/7/04
Segment	5	1200+00	1538+27	56.9	A	clear.clr dated 4/7/04

Projected Costs for Segment 1C based on the average cost/mile of  
Segment 1A from Sta. 10+00 - 261+46 (4.76 miles)

		STATIONING		CLEARING QUANTITY	UNIT	SOURCE
Segment	A	88+00.00	261+46	51.4	Acre	clear.clr dated 4/7/04
		Quantity	Cost/Acre	Clearing Cos	Acres/Mile	Cost/Mile
Clearing Cost:		51.4	\$3,500	\$179,900	10.8	\$36,343

Say **\$36,000** per Mile

Roadway Excavation incl Haul

CY

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Coffman Cove Schedule B, 2003				Engineers Estimate		SE Road Builders		Kiewitt Pacific Co.		Secon	
Item #	Item Unit	Description	Quantity	Unit Price	Amount	Unit Price	Amount	Unit Price	Amount	Unit Price	Amount
20401 A	m <sup>3</sup>	roadway excavation	528,752	\$5.50	\$2,908,136.00	\$7.99	\$4,224,728.48	\$9.50	\$5,023,144.00	\$13.00	\$6,873,776.00

(Common price in bid tabs)

Coffman Cove (1)

Ave. Units Total

\$9 528752 m3 \$4,758,768

691581 yd3

\$7 per yd3

Embankment was included in Coffman Cove bid price

Coffman Cove (1)

Ave. Units Total

\$10 528752 m3 \$5,287,520

691581 yd3

\$8 per yd3

Embankment was included in Coffman Cove bid price

Excavation includes much drilling and hauling

Say

\$8 per yd3

Embankment includes haul and placement

Say

\$0 per yd3

## QUANTITIES

			EXCAVATION		EMBANKMENT		SOURCE
Segment		STATIONING	QUANTITY	UNIT	QUANTITY	UNIT	
Segment 1 A	88+00.00	261+46.28	29,752	Cu. Yd.	291,545	Cu. Yd.	EW_1F2.log dated 4/7/04
Segment 1 B	10+00	270+63	566,567	Cu. Yd.	242,634	Cu. Yd.	EW_1F2.log dated 4/7/04
Segment 1 C	MP 0.00	MP 8.02	768,017	mile	51,108	mile	Scenario 2 - See Below
Segment 2	260+00	444+51	119,753	Cu. Yd.	420,314	Cu. Yd.	EW_1F2.log dated 7/7/04
Segment 3	444+50	737+30	1,373,899	Cu. Yd.	932,763	Cu. Yd.	EW_1F2.log dated 7/7/04
Segment 4	740+00	1200+75	922,217	Cu. Yd.	754,397	Cu. Yd.	EW_1F2.log dated 4/7/04
Segment 5	1200+00	1538+27	122,187	Cu. Yd.	817,683	Cu. Yd.	EW_1F2.log dated 7/7/04
			3,902,392		3,510,444		

Scenario #1 - Projected Costs for Segment 1C based on the average cost/mile **of the first mile** of Segment 1A from Sta. 10+00 - 63+00 - Based on complexity use \$8/C.Y. Excavation & \$5/C.Y. Embankment

Segment 1	Option A	STATIONING	EXCAVATION		UNIT	EMBANKMENT		SOURCE
			QUANTITY			QUANTITY	UNIT	
		10+00	63+00	1,315,173	Cu. Yd.	0	Cu. Yd.	EW_1F2.log dated 4/7/04

	Quantity	Cost/C.Y.	Excav. Cost	Cost/Mile	
Excavation Cost:	1,315,173	\$8.00	\$10,521,384	\$9,210,978	<b>NOTE: Cost too excessive, utilize scenario #2.</b>
Embankment Cost:	40,229	\$0.00	\$0	\$0	

Scenario #2 - Projected Costs for Segment 1C based on the average cost/mile **of the first 2 miles** of Segment 1A from Sta. 10+00 - 115+60 - Based on complexity use \$8/C.Y. for Excavation.

Segment 1	Option A	STATIONING	EXCAVATION		UNIT	EMBANKMENT		SOURCE
			QUANTITY			QUANTITY	UNIT	
		88+00.00	115+60	1,536,033	Cu. Yd.	0	Cu. Yd.	EW_1F2.log dated 4/7/04

	Quantity	Cost/C.Y.	Excav. Cost	Cost/Mile
Excavation Cost:	1,536,033	\$8.00	\$12,288,264	\$6,144,132
Embankment Cost:	102,216	\$0.00	\$0	\$0

**Excavation includes much drilling and hauling** Say **\$6,200,000** per Mile

Subexcavation

CY

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Coffman Cove Schedule B, 2003				Engineers Estimate		SE Road Builders		Kiewitt Pacific Co.		Secon	
Item #	Item Unit	Description	Quantity	Unit Price	Amount	Unit Price	Amount	Unit Price	Amount	Unit Price	Amount
20402	m <sup>3</sup>	subexcavation	280,000	\$12.00	\$3,360,000.00	\$13.28	\$3,718,400.00	\$12.00	\$3,360,000.00	\$7.00	\$1,960,000.00

(Common price in bid tabs)

Coffman Cove (1)

Ave.	Units	Total
\$11	28000 m3	\$301,280
	36603 yd3	

\$8 per yd3

Say **\$8** per yd3**QUANTITIES**

		STATIONING	QUANTITY	UNIT	SOURCE
Segment	1 A	88+00 261+46	53100	CY	Geotechnical Memo GM 1-04
Segment	1 B	10+00 270+63	17400	CY	See Below
Segment	1 C	MP 0.00 MP 8.02	13950	Mile	See Below
Segment	2	260+00 444+51	92100	CY	Geotechnical Memo GM 1-04
Segment	3	444+50 737+30	43100	CY	Geotechnical Memo GM 1-04
Segment	4	740+00 1200+75	16400	CY	Geotechnical Memo GM 1-04
Segment	5	1200+00 1538+27	41800	CY	Geotechnical Memo GM 1-04
			277850	CY	

Projected Costs for Segment 1 Option C based on the average cost/mile of  
Segment 1A from Sta. 88+00 - 261+46 (4.76 miles)

		STATIONING		SUB-EX. QUANTITY	UNIT	SOURCE
Segment	A	88+00.00	261+46	53,100	Cu. Yd.	Geotechnical Memo GM 1-04
		Quantity	Cost/C.Y.	Sub-Ex. Cost	C.Y./Mile	Cost/Mile
SubEx. Cost:		53,100	\$8.00	\$424,800	11155	\$89,244

**Say \$90,000 per Mile**



Coffman Cove Schedule B, 2003				Engineers Estimate		SE Road Builders		Kiewitt Pacific Co.		Secon	
Item #	Item Unit	Description	Quantity	Unit Price	Amount	Unit Price	Amount	Unit Price	Amount	Unit Price	Amount
40101	t	Hot asphalt concrete pavement Class B, grading C, type I pavement smoothness	22,300	\$38.00	\$847,400.00	\$45.00	\$1,003,500.00	\$34.00	\$758,200.00	\$40.00	\$892,000.00
40103	t	asphalt cement grade SHRP PG 58-28	1,200.0	\$350.00	\$420,000.00	\$475.00	\$570,000.00	\$400.00	\$480,000.00	\$400.00	\$480,000.00
40104	t	mineral filler (hydrated lime)	220.0	\$160.00	\$35,200.00	\$317.80	\$69,916.00	\$350.00	\$77,000.00	\$350.00	\$77,000.00
41201	t	tack coat grade CSS-1	40.0	\$250.00	\$10,000.00	\$458.00	\$18,320.00	\$500.00	\$20,000.00	\$500.00	\$20,000.00
Subtotals:							\$1,661,736	\$1,335,200		\$1,469,000	

(Common price in bid tabs)

Coffman Cove (1)

Ave. Units 602100 Total

\$40 22300 t \$892,000

9695.65 m3

12681.4 yd3

\$70 per yd3

Assume 6% for oil, 1% mineral filler, 4% for tack coat increase costs by 10%

\$77

Say **\$80** per yd3

## QUANTITIES

		STATIONING		QUANTITY	UNIT	SOURCE
Segment	1 A	88+00	261+46	4186	CY	EW_1F2.log dated 4/7/04
Segment	1 B	10+00	270+63	5668	CY	See Below
Segment	1 C	MP 0.00	MP 8.02	1208	Mile	See Below
Segment	2	260+00	444+51	4232	CY	EW_1F2.log dated 7/7/04
Segment	3	444+50	737+30	6695	CY	EW_1F2.log dated 7/7/04
Segment	4	740+00	1200+75	10379	CY	EW_1F2.log dated 4/7/04
Segment	5	1200+00	1538+27	8540	CY	5935 CY from EW_Seg5 dated 7/7/04, add 2605 CY for Tunnel.

Quantity for Segment 1C are based on quantity per mile extracted from Segment 1A.

Segment 1A	Total Quantity (C.Y.)	Length (mile)	Quantity/Mile	Cost/Mile
	5750	4.76	1,208	\$96,639

Say **\$97,000** per Mile

5" Crushed Agg.

CY

Coffman Cove Schedule B, 2003				Engineers Estimate		SE Road Builders		Kiewitt Pacific Co.		Secon	
Item #	Item Unit	Description	Quantity	Unit Price	Amount	Unit Price	Amount	Unit Price	Amount	Unit Price	Amount
30101	t	aggregate base grading D	84,000.0	\$11.00	\$924,000.00	\$11.29	\$948,360.00	\$12.00	\$1,008,000.00	\$12.00	\$1,008,000.00

(Common price in bid tabs)

Coffman Cove (1)

Ave. Units 602100 Total

\$12 22300 t \$267,600

9530 m3

12465 yd3

\$21 per yd3

**Say \$20 per yd3**

## QUANTITIES

		STATIONING		QUANTITY	UNIT	SOURCE
Segment	1 A	88+00	261+46	7890	CY	EW_1F2.log
Segment	1 B	10+00	270+63	10678	CY	See Below
Segment	1 C	MP 0.00	MP 8.02	2275	Mile	See Below
Segment	2	260+00	444+51	7977	CY	EW_1F2.log
Segment	3	444+50	737+30	12580	CY	EW_1F2.log
Segment	4	740+00	1200+75	19458	CY	EW_1F2.log
Segment	5	1200+00	1538+27	14444	CY	**11154 CY from EW_Seg5 dated 7/7/04, add 3290 CY for Tunnel.

Quantity for Segment 1B & Segment 1C are based on quantity per mile extracted from Segment 1A.

Segment 1A	Total Quantity (C.Y.)	Length (mile)	Quantity/Mile	Cost/Mile
	10827	4.76	2,275	\$45,492

**Say \$45,000 per Mile**

8" Select Material

CY

Coffman Cove Schedule B, 2003				Engineers Estimate		SE Road Builders		Kiewitt Pacific Co.		Secon	
Item #	Item Unit	Description	Quantity	Unit Price	Amount	Unit Price	Amount	Unit Price	Amount	Unit Price	Amount
20408	t	select topping	97,589	\$8.50	\$829,506.50	\$10.25	\$1,000,287.25	\$12.00	\$1,171,068.00	\$11.00	\$1,073,479.00

(Common price in bid tabs)

Coffman Cove (1)

Ave. Units Total

\$11 97589 t \$1,073,479

41704.7 m3

54547.71 yd3

\$20 per yd3

Say **\$20** per yd3**QUANTITIES**

		STATIONING		QUANTITY	UNIT	SOURCE
Segment	1 A	88+00	261+46	14667	CY	Section1F2\EW_1F2.log dated 4/7/2004
Segment	1 B	10+00	270+63	19839	CY	See Below
Segment	1 C	MP 0.00	MP 8.02	4229	Mile	See Below
Segment	2	260+00	444+51	14806	CY	Section1F2\EW_1F2.log dated 4/7/2004
Segment	3	444+50	737+30	23386	CY	Section1F2\EW_1F2.log dated 4/7/2004
Segment	4	740+00	1200+75	36257	CY	Section1F2\EW_1F2.log dated 4/7/2004
Segment	5	1200+00	1538+27	20743	CY	Section1F2\EW_1F2.log dated 4/7/2004

Quantity for Segment 1C are based on quantity per mile extracted from Segment 1A.

Segment 1A	Total Quantity (C.Y.)	Length (mile)	Quantity/Mile	Cost/Mile
	19839	4.94	4,016	\$80,320

Say **\$85,000** per Mile

Tunnel  
Tunnel (excludes paving and drainage) LF 1.5 miles

One Bore	Quantity	unit	price/unit	cost	
area of excavation	890	sq. ft			
length	7,920				
full perimeter	123	ft			
wall perimeter	87	ft			
waterproofing	689,040	sqfeet			
volume of tunnel excavation	261,067	cuyd	\$160.00	\$41,770,667	
8 Safe houses 50' x 10' x 15:	2,222	cuyd	\$160.00	\$355,556	
Shotcrete					
Bolts 8' long on 8'x8' pattern (3800' interior)	6,584	each	\$500.00	\$3,291,750	
Bolts 8' long on 4x4 pattern (100' each portal, near portals)	650	each	\$500.00	\$325,000	
Wire Mesh at Portals	15,000	sqyd	\$3.00	\$45,000	
Shotcrete 3" interior tunnel	64,167	sqyd	\$150.00	\$9,625,000	
Shotcrete 6" portals tunnel	15,000	sqyd	\$250.00	\$3,750,000	
filter fabric	64,167	sqyd	\$9.00	\$577,500	
Waterproofing Membrane	7,700	ft	\$1,000.00	\$7,700,000	
Concrete lining cut and cover at portals	417	cuyd	\$600.00	\$250,000	
Subtotal				\$67,690,472	
Electrical				\$1,692,262	
Special Systems (telephone, CCTV, Ventilation for safe houses)				\$3,384,524	
Lighting				\$3,384,524	
Totals for one bore				\$76,151,781	
					<b>Summary: one bore</b>
					\$67,690,472
					\$1,692,262
					\$3,384,524
					\$3,384,524
					<b>\$76,151,781</b>

Two bores- Two One Lane Tunnels	Two bores each		Two bores Total			
	Quantity	unit	Quantity	unit	price/unit	cost
area of excavation	586	sq. ft	1,172	sq. ft		
length						
full perimeter	102	ft	204	ft		
wall perimeter	70	ft	140	ft		
waterproofing		sqfeet	1,108,800	sq.ft		
volume of tunnel excavation	171,893	cuyd	343,787	cuyd	\$160.00	\$49,849,067
8 Safe houses 50' x 10' x 15			13 Cross passages 10x10x60			
		cuyd	2,889	cuyd	\$160.00	\$462,222
Shotcrete	22					
Bolts 8' long on 8'x8' pattern (3800' interior)		each	4,514	each	\$500.00	\$2,257,200
Bolts 8' long on 4x4 pattern (100' each portal, near portals)		each	600	each	\$500.00	\$300,000
Wire Mesh at Portals		sqyd	25,200	sqft	\$3.00	\$75,600
Shotcrete 3" interior tunnel		sqyd	105,336	sqft	\$150.00	\$15,800,400
Shotcrete 6" portals tunnel		sqyd	2,800	sqyd	\$250.00	\$700,000
filter fabric		sqyd	105,336	sqyd	\$9.00	\$948,024
Waterproofing Membrane		ft	3,800	ft	\$1,000.00	\$3,800,000
Concrete lining cut and cover at portals		cuyd	700	cuyd	\$600.00	\$420,000
Subtotal						\$74,612,513
Electrical						\$1,865,313
Special Systems (telephone, CCTV)						\$3,730,626
Lighting						\$3,730,626
Totals for two bore						\$83,939,077

[illegible]

The double bore alternative is very close in cost to the single bore. However, based on the information available at this time, my recommendation is to use the double bore alternative for this project because the following reasons.

- Safety. The one lane double bore provides greater safety to the traveling public than the single bore with two way traffic.
- Maintenance costs. A single bore will require special equipment for the tunnel operation during emergencies (safe houses will require ventilation and other equipment), the maintenance cost of a single bore will be much greater than for a double bore
- A double bore could be constructed with a shoulder for almost the same cost of a single bore with no shoulders.

From Jesus Rohena, via email April 1, 2004

My estimate was for a 4000 ft rock tunnel. No permanent concrete lining was assumed, only shotcrete for the tunnel interior. I assumed a concrete lining for cut and cover section at the portals. No pavement or drainage was included on the estimate. A production rate of 8 to 12 ft could be expected for rock tunneling per 8 hrs shift.

From Jesus Rohena, via email April 5, 2004

Use two bores-Two One Lane Tunnel Summary:

\$83,939,077

Say	\$10,600	per ln. ft
-----	----------	------------



From Don Richards, via email October 12, 2004  
[The doBradfield Tunnel Cost Summary - PRELIMINARY](#)

Estimated Tunnel Cost Consideration	Option 1	Option 2
	Twin Bore	Single Bore
	Uni-directional	Bi-directional
Total Cost w/portals (\$)	#####	169,373,239
Unit cost with portals* (\$/lf)	16,021	21,172
Total Cost w/o portals(\$)	95,793,000	118,193,400
Unit cost w/o portals* (\$/lf)	11,974	14,774

Note: The Costs shown above includes a 25% contingency fee added by PB. Final Costs DO NOT include this contingency fee. The Contingency Costs are added to the SubTotal to arrive at a Total Construction Cost Estimate.

From Don Richards, via email October 20, 2004

[The doBradfield Tunnel Cost Summary - PRELIMINARY](#)

Estimated Tunnel Cost Consideration	Option 1	Option 2
	Twin Tunnel	Single Tunnel
Total Cost w/25% Contingency	95,793,000	118,193,400
Tunnel Unit Cost w/25% Contingency	11,974	14,774
Total Cost w/o portals(\$)	75,267,900	92,672,500
Unit cost w/o portals* (\$/lf)	9,409	11,584

**FINAL ESTIMATE - SEE Parsons Brinckerhoff FINAL REPORT Dated NOVEMBER 30, 2004. See Section 8 - Construction Cost Estimates**

Say **\$9,150** per ln. ft

Bridge Structure - Low Complexity SF  
 Bridge Structure - Medium Complexity SF  
 Bridge Structure - High Complexity SF

**SPREADSHEET DEVELOPED BY M. VENEROSO 4/05/04** Edited by Durazo 9/10/04

	Sta	BOB	EOB	Bridge Length (ft)	Bridge Area <sup>1</sup> (sq.ft.)	Complexity			Cost \$
						Low <sup>2</sup>	Medium <sup>3</sup>	High <sup>4</sup>	
Seg 1	130+00	120+20	121+80	160	4,800		X		\$960,000
Seg 1	227+00	224+74	228+00	326	9,780			X	\$2,689,500
Seg 1B	50+00	48+70	49+70	100	3,000	X			\$450,000
Seg 1B	54+00	54+00	55+00	100	3,000	X			\$450,000
Seg 1B	132+50	132+50	134+75	225	6,750		X		\$1,350,000
Seg 1B	267+00	267+00	270+35	400	12,000			X	\$3,300,000
Seg 2	345+00	344+15	345+80	200	6,000		X		\$1,200,000
Seg 3	567+00	564+00	566+00	200	6,000		X		\$1,200,000
Seg 4	762+00	761+60	763+35	200	6,000	X			\$900,000
Seg 4	869+00	867+00	872+00	500	15,000			X	\$4,125,000
Seg 4	972+00	970+50	974+00	350	10,500		X		\$2,100,000
Seg 4	1090+00	1089+00	1092+00	300	9,000		X		\$1,800,000
Seg 4	1106+00	1107+50	1109+20	170	5,100		X		\$1,020,000
Seg 5	1379+00	1381+40	1383+25	185	5,550		X		\$1,110,000
Seg 5	1497+00	1494+00	1497+50	350	10,500		X		\$2,100,000
Total				3,766	112,980				\$24,754,500

<sup>1</sup> Deck area based on average bridge width = 30

<sup>2</sup> Low complexity bridge, \$/SF = **\$150**

<sup>3</sup> Medium complexity bridge, \$/SF = **\$200**

<sup>4</sup> High complexity bridge, \$/SF = **\$275**

## SUMMARY

	Sta	BOB	EOB	Bridge Length (lin.ft.)	Bridge Area <sup>1</sup> (sq.ft.)	Complexity			Cost \$
						Low <sup>2</sup>	Medium <sup>3</sup>	High <sup>4</sup>	
Seg 1A	120+00	120+20	121+80	160	4800	0	4800	0	\$960,000
	227+00	224+74	228+00	326	9780	0	0	9780	\$2,689,500
	Subtotal:			486		0	4,800	9780	
	<b>SAY</b>					<b>0</b>	<b>4,800</b>	<b>9,780</b>	
Seg 1B	48+00	48+70	49+70	100	3,000	3000			\$450,000
	54+00	54+00	55+00	100	3,000	3,000			\$450,000
	132+50	132+50	134+75	225	6,750		6,750		\$1,350,000
	267+00	267+00	270+35	400	12,000			12,000	\$3,300,000
	Subtotal:			825		6000	6,750	12000	
	<b>SAY</b>			<b>825</b>	<b>24,750</b>	<b>6,000</b>	<b>6,750</b>	<b>12,000</b>	
Seg 1C	Costs based on a per mile bases - See Below					3000	6750	10050	\$1,000,000
	<b>SAY</b>								
Seg 2	345+00	344+15	345+80	200	6,000	0	6000	0	\$1,200,000
	Subtotal:			200		0	6,000	0	
	<b>SAY</b>					<b>0</b>	<b>6,000</b>	<b>0</b>	
Seg 3	567+00	564+00	566+00	200	6,000	0	6000	0	\$1,200,000
	Subtotal:			200		0	6,000	0	
	<b>SAY</b>					<b>0</b>	<b>6,000</b>	<b>0</b>	
Seg 4	762+00	761+60	763+35	200	6,000	6000	0	0	\$900,000
	869+00	867+00	872+00	500	15,000	0	0	15000	\$4,125,000
	972+00	970+50	974+00	350	10,500	0	10500	0	\$2,100,000
	1090+00	1089+00	1092+00	300	9,000	0	9000	0	\$1,800,000
	1106+00	1107+50	1109+20	170	5,100	0	5100	0	\$1,020,000
	Subtotal:			1,520		6000	24,600	15000	
	<b>SAY</b>					<b>6,000</b>	<b>24,600</b>	<b>15,000</b>	
Seg 5	1379+00	1381+40	1383+25	185	5,550	0	5550	0	\$1,110,000
	1497+00	1494+00	1497+50	350	10,500	0	10500	0	\$2,100,000
	Subtotal:			535		0	16,050	0	
	<b>SAY</b>					<b>0</b>	<b>16,050</b>	<b>0</b>	
Total					88,230	6,000	57,450	24,780	\$25,754,500

	Quantity	Complexity	Unit Cost	Cost per Mile		
Seg 1C	1215	Low <sup>3</sup>	\$150	\$182,250	<b>Say</b>	<b>\$180,000</b>
Based on Seg 1B total quantities divided by project length	1366	Medium <sup>3</sup>	\$200	\$273,200	<b>Say</b>	<b>\$275,000</b>
Low Complexity = 6000 sf / 4.94 mile = 1215 sf/Mile	2429	High <sup>4</sup>	\$275	\$667,975	<b>Say</b>	<b>\$675,000</b>
Medium Complexity = 6750 sf / 4.94 miles = 1366 sf/mile						
High Complexity = 12000 sf / 4.94 miles = 2429 sf/Mile						

# Backup Calculations for Bridge price:

Page 3 of 3

Coffman Cove Schedule B, 2003				Engineers Estimate		SE Road Builders		Kiewitt Pacific Co.		Secon	
Item #	Item Unit	Description	Quantity	Unit Price	Amount	Unit Price	Amount	Unit Price	Amount	Unit Price	Amount
55201	m <sup>3</sup>	structural concrete class A (AE)	282.00	\$1,200.00	\$338,400.00	\$1,100.00	\$310,200.00	\$1,200.00	\$338,400.00	Unit Price	Amount
55301	each	precast, prestressed concrete structural members, Blub Tee Girder	6	\$27,000.00	\$162,000.00	\$25,931.00	\$155,586.00	\$50,000.00	\$300,000.00	\$1,000.00	\$282,000.00
55401	kg	reinforcing steel	21,070	\$2.75	\$57,942.50	\$1.50	\$31,605.00	\$3.00	\$63,210.00	\$30,000.00	\$180,000.00
55402	kg	epoxy coated reinforcing steel	1,770	\$3.00	\$5,310.00	\$2.90	\$5,133.00	\$4.00	\$7,080.00	\$2.00	\$42,140.00
55601 A	m	steel bridge railing	48.1	\$300.00	\$14,430.00	\$324.00	\$15,584.40	\$450.00	\$21,645.00	\$4.00	\$7,080.00
55601 b	m	steel bridge railing (retrofit)	132.7	\$350.00	\$46,445.00	\$168.63	\$22,377.20	\$400.00	\$53,080.00	\$400.00	\$19,240.00
55901	m <sup>2</sup>	membrane, waterproofing, class C	260	\$25.00	\$6,500.00	\$75.00	\$19,500.00	\$20.00	\$5,200.00	\$150.00	\$19,905.00
61713	m	bridge transition railing	72.8	\$180.00	\$13,104.00	\$150.00	\$10,920.00	\$300.00	\$21,840.00	\$40.00	\$10,400.00
Subtotal of bridge costs:					\$644,131.50		\$570,905.60		\$810,455.00	\$400.00	\$29,120.00
											\$589,885.00

Bridge on Coffman Cove = 25 m length 11.37 m width 284.25 m2  
Concrete abutments heights= 4.6 m 6.65 m  
(Common price in bid tabs)  
Coffman Ave. Units Total  
\$600,000 1 each \$600,000  
284.25 m2 \$2,111 per m2  
3059.641 sq. ft \$196 per sq.ft  
Say 200 per sq.ft for low complexity bridge

Culverts -  
> 10 foot diameter  
Fish Passage Pipe

EA  
LF

Coffman Cove Schedule B, 2003				Engineers Estimate		SE Road Builders		Kiewitt Pacific Co.		Secon	
Item #	Item Unit	Description	Quantity	Unit Price	Amount	Unit Price	Amount	Unit Price	Amount	Unit Price	Amount
60201 L	m	3600 millimeter pipe culvert	63.3	\$2,300.00	\$145,590.00	\$2,445.00	\$154,768.50	\$2,100.00	\$132,930.00	\$3,200.00	\$202,560.00
60301 A	m	3980 millimeter structural plate pipe	25.0	\$2,500.00	\$62,500.00	\$2,897.00	\$72,425.00	\$3,000.00	\$75,000.00	\$3,200.00	\$80,000.00
60301 B	m	4290 millimeter structural plate pipe	29.3	\$3,000.00	\$87,900.00	\$2,515.00	\$73,689.50	\$3,100.00	\$90,830.00	\$3,200.00	\$93,760.00
65001 A	each	Log weir	9	\$2,000.00	\$18,000.00	\$400.00	\$3,600.00	\$900.00	\$8,100.00	\$400.00	\$3,600.00
65001 B	each	Rock weir	2	\$7,500.00	\$15,000.00	\$250.00	\$500.00	\$2,000.00	\$4,000.00	\$1,000.00	\$2,000.00
25110	each	culvert outlet control system	17	\$3,000.00	\$51,000.00	\$425.00	\$7,225.00	\$800.00	\$13,600.00	\$2,000.00	\$34,000.00
25112	each	riprap headwall	50	\$1,000.00	\$50,000.00	\$222.50	\$11,125.00	\$400.00	\$20,000.00	\$500.00	\$25,000.00
25116	m	energy dissipator	65.0	\$175.00	\$11,375.00	\$132.00	\$8,580.00	\$125.00	\$8,125.00	\$250.00	\$16,250.00

(Common price in bid tabs)  
Coffman Cove (1)

Ave.	Units	Total		
Pipe alone	\$3,000	25 m	\$75,000	
		82.021 In ft		\$914 per In ft
		Say		\$900 per In ft
	Say	100 ft	\$90,000 each	for culverts > 10 ft diameter

8/15/04- As per Sven Leon reduce culvert cost > 10 ft diameter to: \$60,000 each

Additions for fish culvert

Rock weir	\$1,500	1 each	\$1,500	
Culvert Outlet	\$1,000	1 each	\$1,000	
Riprap Headwall	\$500	2 each	\$1,000	
Subtotal for additions:			\$3,500	
		25 m		\$140 per m
		82.021 In ft		\$43 per In ft
		Say		\$50 per In ft
		Say		\$3,500 each
	Say	100 ft	\$90,000 each	

Say \$900 per In ft for fish passage culverts

SEGMENT 1C - Quantities derived from Segment 1A and aerial photo

Fish Passage			Unit Costs	
Say	100 ft	per mile	\$90,000	
				\$90,000 per Mile
for culverts > 10 ft diameter				
Say	1 ea	per mile	\$60,000	
				\$60,000 per Mile

**RECOMMENDATIONS FROM S. LEON:**

		STA	DIA. (ft)	CULVERTS >10 ft		Summation per Segment		FISH PASSAGE		Summation per Segment	
						DIA (ft)	Length (ft)				
SEGMENT	1 A	155+00	12	1	1					0	
SEGMENT	1 A	201+00			0			7	100	100	
SEGMENT	1 A	206+00			0			7	100	100	
SEGMENT	1 A	210+20			0			7	100	100	
Subtotal:		1 A		Say	1	Each				300	ln. ft
SEGMENT	1 B	73+50	12	1	1						
SEGMENT	1 B	103+00	10	1	1						
Subtotal:		1 B		Say	2	Each				0	ln. ft
SEGMENT	1 C		0	0	0						
Subtotal:		1 C		Say	0	Each				0	ln. ft
SEGMENT	2		0	0	0						
Subtotal:		2		Say	0	Each				0	ln. ft
SEGMENT	3	526+50	12	1	1					0	0
SEGMENT	3	615+59	10	1	1					0	0
SEGMENT	3	705+50	10	1	1					0	0
Subtotal:		3		Say	3	Each				0	ln. ft
SEGMENT	4	749+20	8		0					0	0
SEGMENT	4	776+10	8		0					0	0
Subtotal:		4		Say	0	Each				0	ln. ft
SEGMENT	5	1207+20	12	1	1					0	0
SEGMENT	5	1371+00	10	1	1					0	0
Subtotal:		5		Say	2	Each				0	ln. ft
				8	8	Each				300	300 ln. ft.

Revetment Wall | CY | | |  
 (Class V Riprap)

Coffman Cove Schedule B, 2003				Engineers Estimate		SE Road Builders		Kiewitt Pacific Co.		Secon	
Item #	Item Unit	Description	Quantity	Unit Price	Amount	Unit Price	Amount	Unit Price	Amount	Unit Price	Amount
25101	m <sup>3</sup>	placed riprap, class 2	100	\$25.00	\$2,500.00	\$172.67	\$17,267.00	\$40.00	\$4,000.00	\$30.00	\$3,000.00
25103	m <sup>3</sup>	keyed riprap, class 5	400	\$50.00	\$20,000.00	\$22.97	\$9,188.00	\$40.00	\$16,000.00	\$50.00	\$20,000.00

(Common price in bid tabs)

Coffman Cove (1)

Ave. Units Total

\$50 400 m3 \$20,000

523.1804 yd3 \$38 per yd3

Say **\$40** per yd3

RIPRAP REVETMENT LOCATIONS (See Sheet B.3)			9/10/2004
Typical Dimensions: [5'd x 20'h (slope distance) x length] + [5'd x 10'w (base) x length]			
SEGMENT 1	Option 1A	1300 CY	
SEGMENT 1	Option 1B	22000 CY	
SEGMENT 1	Option 1C	2818 per Mile	
SEGMENT 2		43900 CY	
SEGMENT 3		8800 CY	
SEGMENT 4		24600 CY	
SEGMENT 5		14900 CY	



MSE Wall      |      SF      |      |      |      |

Coffman Cove Schedule B, 2003				Engineers Estimate		SE Road Builders		Kiewitt Pacific Co.		Secon	
Item #	Item Unit	Description	Quantity	Unit Price	Amount	Unit Price	Amount	Unit Price	Amount	Unit Price	Amount
25119	m <sup>2</sup>	riprap blanket	11,000.0	\$20.00	\$220,000.00	\$13.47	\$148,170.00	\$11.50	\$126,500.00	\$15.00	\$165,000.00
25203	m <sup>3</sup>	rock buttress, mechanically-placed	3,500	\$40.00	\$140,000.00	\$12.34	\$43,190.00	\$15.00	\$52,500.00	\$30.00	\$105,000.00
25504	m <sup>2</sup>	geogrid wall	180	\$300.00	\$54,000.00	\$290.00	\$52,200.00	\$300.00	\$54,000.00	\$350.00	\$63,000.00
26201	m <sup>2</sup>	rockery wall	900	\$225.00	\$202,500.00	\$61.00	\$54,900.00	\$175.00	\$157,500.00	\$100.00	\$90,000.00

(Common price in bid tabs)

Coffman Cove (1)

Ave.      Units      Total

\$300      180 m2      \$54,000

1937.504 sq.ft      \$28 per sq ft

**Say      \$30 per sq ft**

## QUANTITIES

		STATIONING		QUANTITY	UNIT	SOURCE
Segment	1 A	88+00	261+46	0	SF	Geotechnical Memo GM 1-04
Segment	1 B	10+00	270+63	121700	SF	See Below
Segment	1 C	MP 0.00	MP 8.02	24,636	Mile	See Below
Segment	2	260+00	444+51	33000	SF	See RockFallDitch&MSE.xls 7/11/04
Segment	3	444+50	737+30	49500	SF	See RockFallDitch&MSE.xls 7/11/04
Segment	4	740+00	1200+75	160200	SF	See RockFallDitch&MSE.xls 7/11/04
Segment	5	1200+00	1538+27	0	SF	See RockFallDitch&MSE.xls 7/11/04

Quantity for Segment 1C are based on quantity per mile extracted from Segment 1B.

Segment 1B	Total Quantity (S.F.)	Length (mile)	Quantity/Mile	Cost/Mile
	121700	4.94	24,636	\$739,069

**Say      \$750,000 per Mile**

Coffman Cove Schedule B, 2003				Engineers Estimate		SE Road Builders		Kiewitt Pacific Co.		Secon	
Item #	Item Unit	Description	Quantity	Unit Price	Amount	Unit Price	Amount	Unit Price	Amount	Unit Price	Amount
21101 B	m <sup>2</sup>	roadway obliteration, type 2	46,000	\$4.50	\$207,000.00	\$2.45	\$112,700.00	\$1.00	\$46,000.00	\$5.00	\$230,000.00

(Common price in bid tabs)

Coffman Cove (1)

Ave. Units Total

\$3 46000 m2 \$138,000

495140 sq.ft \$0.28 per sq ft  
 11.3668 A Say \$1.15 per sq ft  
 \$12,141 per A

\$50,094 per A based on sq. ft. costs

Say **\$25,000** per A

Wetland mitigation in SE Alaska for Coffman Cove was conserving the top layer of muskeg and placing it on obliterated road.

Wetland mitigation may be more difficult to create on this project.

**I think the wetland mitigation estimates are too uniformly distributed, and high, in both acres and cost/acre. Here's my best guess: \$25,000/acre to mitigate (Big Salt cost \$12K/acre and Coffman (1) and (2) cost \$7K/acre), so \$25K for Bradfield is generous. I'd estimate 20 acres each for Segments 1-3 (same as you have), but I'd drop to 10 acres for Segment 4 and 5 acres for Segment 5, for a total of 75 acres, and a total cost of \$1,875,000 - still generous, but more realistic.**

Steve

Email 4/6/2004

**QUANTITIES**

		STATIONING		QUANTITY	UNIT	SOURCE
Segment	1 A	88+00	261+46	20	A	See Email above
Segment	1 B	10+00	270+63	20	A	
Segment	1 C	MP 0.00	MP 8.02	20	A	
Segment	2	260+00	444+51	20	A	See Email above
Segment	3	444+50	737+30	20	A	See Email above
Segment	4	740+00	1200+75	10	A	See Email above
Segment	5	1200+00	1538+27	5	A	See Email above
				115	A	

Note: Quantities for Segment 1C are based on allowance for Segment 1A

Drainage - Allowance

Mile

Coffman Cove Schedule B, 2003				Engineers Estimate		SE Road Builders		Kiewitt Pacific Co.		Secon	
Item #	Item Unit	Description	Quantity	Unit Price	Amount	Unit Price	Amount	Unit Price	Amount	Unit Price	Amount
60201 B	m	600 millimeter pipe culvert	1,800	\$100.00	\$180,000.00	\$125.17	\$225,306.00	\$180.00	\$324,000.00	\$110.00	\$198,000.00
60201 C	m	900 millimeter pipe culvert	120	\$150.00	\$18,000.00	\$208.00	\$24,960.00	\$260.00	\$31,200.00	\$150.00	\$18,000.00
60201 D	m	1050 millimeter pipe culvert	55	\$200.00	\$11,000.00	\$250.00	\$13,750.00	\$300.00	\$16,500.00	\$175.00	\$9,625.00
60201 E	m	1200 millimeter pipe culvert	51	\$325.00	\$16,575.00	\$400.00	\$20,400.00	\$320.00	\$16,320.00	\$250.00	\$12,750.00
60201 F	m	1650 millimeter pipe culvert	73	\$375.00	\$27,375.00	\$419.00	\$30,587.00	\$750.00	\$54,750.00	\$350.00	\$25,550.00
60201 G	m	1800 millimeter pipe culvert	35.9	\$400.00	\$14,360.00	\$772.00	\$27,714.80	\$850.00	\$30,515.00	\$800.00	\$28,720.00
60201 H	m	2100 millimeter pipe culvert	59.1	\$700.00	\$41,370.00	\$936.00	\$55,317.60	\$800.00	\$47,280.00	\$900.00	\$53,190.00
60201 I	m	2400 millimeter pipe culvert	103.7	\$725.00	\$75,182.50	\$996.00	\$103,285.20	\$850.00	\$88,145.00	\$1,000.00	\$103,700.00
60206 A	each	end section for 450 millimeter pipe culvert	7	\$150.00	\$1,050.00	\$192.00	\$1,344.00	\$150.00	\$1,050.00	\$300.00	\$2,100.00
60206 B	each	end section for 600 millimeter pipe culvert	55	\$200.00	\$11,000.00	\$233.00	\$12,815.00	\$175.00	\$9,625.00	\$350.00	\$19,250.00
60206 C	each	end section for 900 millimeter pipe culvert	2	\$350.00	\$700.00	\$750.00	\$1,500.00	\$500.00	\$1,000.00	\$700.00	\$1,400.00
25116	m	energy dissipator	65.0	\$175.00	\$11,375.00	\$132.00	\$8,580.00	\$125.00	\$8,125.00	\$250.00	\$16,250.00

(Common price in bid tabs)

Coffman Cove (1)

	Ave.	Units	Total
Pipe alone	\$500	20 m	\$10,000
		65.6168 ln ft	
		Say	\$152 per ln ft
			\$200 per ln ft
		70 ft	\$14,000 each
		Say	

#### Additions to drainage

	Ave.	Units	Total
End Section	\$500	2 each	\$1,000
Energy dissipator	\$50	3 ln ft	\$150
subtotal			\$1,150
		20 m	\$58 per m
		65.6168 ln ft	\$18 per ln ft
		Say	\$25 per ln ft
		Say	\$1,150 each

Does not account for underdrains, horizontal pipes, or riprap lined ditches etc.

Say 70 ft of culvert every 500 ft = 739.2 ln feet of culvert per mile

Say 750 ln feet of culvert per mile to include other drainage incidentals

\$225 x 750' = \$168,750

Say **\$180,000** per mile f (very wet climate)

See Hydraulic Report from Sven Leon dated 9/15/04 reduce drainage cost to:

**\$80,000** per Mile

Coffman Cove Schedule B, 2003				Engineers Estimate		SE Road Builders		Kiewitt Pacific Co.		Secon	
Item #	Item Unit	Description	Quantity	Unit Price	Amount	Unit Price	Amount	Unit Price	Amount	Unit Price	Amount
62514	slry unit	Turf establish ment	300	\$700.00	\$210,000.00	\$621.15	\$186,345.00	\$850.00	\$255,000.00	\$550.00	\$165,000.00
62603	each	Cuttings, alder	630	\$2.00	\$1,260.00	\$5.00	\$3,150.00	\$10.00	\$6,300.00	\$5.00	\$3,150.00
62604	each	Bundle, alder	50	\$5.00	\$250.00	\$67.00	\$3,350.00	\$30.00	\$1,500.00	\$25.00	\$1,250.00
62407 A	m <sup>2</sup>	Placing conserved topsoil, 300 millimeter s depth	46,000	\$3.00	\$138,000.00	\$2.88	\$132,480.00	\$1.25	\$57,500.00	\$3.00	\$138,000.00

(Common price in bid tabs)

Coffman Cove (1)

Ave.	Units	Total
Seeding		
\$700	300 slry unit	\$21,000
	30 ha	
	114 A	
	Say	

\$700 per ha  
\$184 per A  
\$250 per A

Ave.	Units	Total
Conserved topsoil		
\$3	46000 m2	\$14
	4.6 ha	
	11.3668 A	

\$3 per ha  
\$1 per A

**Say** **\$250** per A

**QUANTITIES**

		STATIONING		QUANTITY	UNIT	SOURCE
Segment	1 A	88+00	261+46	18.1	A	Seed1.ser dated 4/6/04
Segment	1 B	10+00	270+63	22.3	A	1b_seed.ser dated 7/29/04
Segment	1 C	MP 0.00	MP 8.02	6.2	A	See Below
Segment	2	260+00	444+51	21.5	A	Seed1.ser dated 7/6/04
Segment	3	444+50	737+30	49.98	A	Seed1.ser dated 7/7/04
Segment	4	740+00	1200+75	50.47	A	Seed1.ser dated 7/7/04
Segment	5	1200+00	1538+27	40.56	A	Seed1.ser dated 7/7/04
				209.11	A	

Segment 1C based on quantities from Segment 1B

22.3 acres / 4.94 miles = 4.5 Acres/Mile

4.5 Acres \* \$250/Acre = \$1,125

Say **\$1,500** per Mile

Guard Rail

| LF |

|

Coffman Cove Schedule B, 2003				Engineers Estimate		SE Road Builders		Kiewitt Pacific Co.		Secon	
Item #	Item Unit	Description	Quantity	Unit Price	Amount	Unit Price	Amount	Unit Price	Amount	Unit Price	Amount
61701	m	guardrail system G4, type I, class A (wood posts)	430.0	\$80.00	\$34,400.00	\$112.00	\$48,160.00	\$70.00	\$30,100.00	\$100.00	\$43,000.00
61702 A	m	terminal section type G4-BAT	6	\$2,000.00	\$12,000.00	\$2,977.00	\$17,862.00	\$2,500.00	\$15,000.00	\$3,000.00	\$18,000.00
61702 B	each	terminal section type tangent	12	\$2,500.00	\$30,000.00	\$2,988.00	\$35,856.00	\$2,500.00	\$30,000.00	\$2,500.00	\$30,000.00

(Common price in bid tabs)

Coffman Cove (1)

Ave. Units Total

\$100 430 m \$43,000

1410.76 ln ft \$30 per ln ft

Guardrail was estimated for areas protecting MSE walls and slopes greater than 50 ft.

Guardrail quantities were increased by 10% to compensate for flared areas.

To include extra length to obtain flare and termini

Say \$50 per ln ft



Quantities				Length	Summation per Segment	To Protect:
SEGMENT	1 A - Left Side	STA 172+50	STA 175+50	300	300	Fills > 50'
<b>Subtotal:</b>	<b>1 A</b>			<b>Say</b>	<b>300</b>	<b>In.ft</b>
SEGMENT	1 B - Right Side	STA 10+00	STA 168+40	15840		
15840				<b>Say</b>	<b>15,840</b>	<b>In.ft</b>
<b>Subtotal:</b>	<b>1 B</b>	Assume	<b>0%</b>	of total length		
SEGMENT	1 C			<b>Say</b>	<b>\$5,300</b>	<b>per Mile</b>
<b>Subtotal:</b>	<b>1 C</b>	Assume	<b>0%</b>	of total length		
SEGMENT	2 Left Side	STA 331+50	STA 336+50	500	500	Fills > 50'
SEGMENT	2 Left Side	393+50	395+50	200	700	Fills > 50'
SEGMENT	2 Left Side	441+50	443+50	200	900	Fills > 50'
<b>Subtotal:</b>	<b>2</b>			<b>Say</b>	<b>900</b>	<b>In.ft</b>

SEGMENT	3 Left Side	454+50	458+50	400	400	Fills > 50'
SEGMENT	3 Left Side	486+50	487+50	100	500	Fills > 50'
SEGMENT	3 Left Side	489+50	490+50	100	600	Fills > 50'
SEGMENT	3 Left Side	497+50	500+50	300	900	Fills > 50'
SEGMENT	3 Left Side	503+50	505+50	200	1100	Fills > 50'
SEGMENT	3 Left Side	512+50	515+50	300	1400	Fills > 50'
SEGMENT	3 Left Side	523+50	528+50	500	1900	Fills > 50'
SEGMENT	3 Left Side	529+50	531+50	200	2100	Fills > 50'
SEGMENT	3 Left Side	537+50	538+50	100	2200	Fills > 50'
SEGMENT	3 Left Side	539+50	542+50	300	2500	Fills > 50'
SEGMENT	3 Left Side	551+50	554+50	300	2800	Fills > 50'
SEGMENT	3 Left Side	571+50	581+50	1000	3800	Fills > 50'
SEGMENT	3 Right Side	571+50	579+50	800	4600	Fills > 50'
SEGMENT	3 Left Side	592+00	594+00	200	4800	Fills > 50'
SEGMENT	3 Left Side	598+00	602+00	400	5200	Fills > 50'
SEGMENT	3 Left Side	611+00	616+00	500	5700	Fills > 50'
SEGMENT	3 Right Side	615+00	616+00	100	5800	Fills > 50'
SEGMENT	3 Left Side	617+50	618+50	100	5900	Fills > 50'
SEGMENT	3 Left Side	619+50	622+50	300	6200	Fills > 50'
SEGMENT	3 Left Side	623+50	625+50	200	6400	Fills > 50'
SEGMENT	3 Left Side	629+50	635+50	600	7000	Fills > 50'
SEGMENT	3 Left Side	637+50	647+50	1000	8000	Fills > 50'
SEGMENT	3 Left Side	663+50	667+50	400	8400	Fills > 50'
SEGMENT	3 Left Side	672+50	673+50	100	8500	Fills > 50'
SEGMENT	3 Left Side	675+50	676+50	100	8600	Fills > 50'
SEGMENT	3 Left Side	687+50	690+50	300	8900	Fills > 50'
SEGMENT	3 Left Side	692+50	693+50	100	9000	Fills > 50'
SEGMENT	3 Left Side	695+50	707+50	1200	10200	Fills > 50'
<b>Subtotal:</b>	<b>3</b>			<b>Say</b>	<b>10200</b>	<b>ln.ft</b>

SEGMENT	4 Left Side	773+50	777+50	400	400	Fills > 50'
SEGMENT	4 Left Side	784+50	787+50	300	700	Fills > 50'
SEGMENT	4 Left Side	823+50	825+50	200	900	Fills > 50'
SEGMENT	4 Left Side	826+50	827+50	100	1000	Fills > 50'
SEGMENT	4 Left Side	833+50	834+50	100	1100	Fills > 50'
SEGMENT	4 Left Side	846+50	852+50	600	1700	Fills > 50'
SEGMENT	4 Left Side	854+50	856+50	200	1900	Fills > 50'
SEGMENT	4 Right Side	867+50	870+50	300	2200	Fills > 50'
SEGMENT	4 Left Side	867+50	870+50	300	2500	Fills > 50'
SEGMENT	4 Left Side	870+50	872+50	200	2700	Fills > 50'
SEGMENT	4 Left Side	875+50	876+50	100	2800	Fills > 50'
SEGMENT	4 Left Side	884+50	888+50	400	3200	Fills > 50'
SEGMENT	4 Right Side	971+50	973+50	200	3400	Fills > 50'
SEGMENT	4 Left Side	971+50	978+50	700	4100	Fills > 50'
SEGMENT	4 Right Side	986+50	990+50	400	4500	Fills > 50'
SEGMENT	4 Left Side	988+50	990+50	200	4700	Fills > 50'
SEGMENT	4 Right Side	993+50	994+50	100	4800	Fills > 50'
SEGMENT	4 Right Side	996+50	998+50	200	5000	Fills > 50'
SEGMENT	4 Right Side	1003+50	1006+50	300	5300	Fills > 50'
SEGMENT	4 Right Side	1010+50	1013+50	300	5600	Fills > 50'
SEGMENT	4 Right Side	1018+50	1027+50	900	6500	Fills > 50'
SEGMENT	4 Right Side	1028+50	1031+50	300	6800	Fills > 50'
SEGMENT	4 Right Side	1033+50	1037+50	400	7200	Fills > 50'
SEGMENT	4 Right Side	1041+50	1045+50	400	7600	Fills > 50'
SEGMENT	4 Right Side	1046+50	1049+50	300	7900	Fills > 50'
SEGMENT	4 Right Side	1051+50	1065+50	1400	9300	Fills > 50'
SEGMENT	4 Left Side	1061+50	1063+50	200	9500	Fills > 50'
SEGMENT	4 Right Side	1069+50	1071+50	200	9700	Fills > 50'
SEGMENT	4 Left Side	1078+50	1082+50	400	10100	Fills > 50'
SEGMENT	4 Right Side	1079+50	1082+50	300	10400	Fills > 50'
SEGMENT	4 Right Side	1086+50	1087+50	100	10500	Fills > 50'
SEGMENT	4 Left Side	1088+50	1089+50	100	10600	Fills > 50'
SEGMENT	4 Right Side	1088+50	1093+50	500	11100	Fills > 50'
SEGMENT	4 Right Side	1105+50	1106+50	100	11200	Fills > 50'
SEGMENT	4 Right Side	1111+50	1115+50	400	11600	Fills > 50'
SEGMENT	4 Right Side	1139+50	1140+50	100	11700	Fills > 50'
SEGMENT	4 Right Side	1143+50	1147+50	400	12100	Fills > 50'

SEGMENT	4 Right Side	1153+50	1169+50	1600	13700	Fills > 50'
SEGMENT	4 Right Side	1180+50	1186+50	600	14300	Fills > 50'
SEGMENT	4 Right Side	1189+50	1193+50	400	14700	Fills > 50'
<b>Subtotal:</b>	<b>4</b>			<b>Say</b>	<b>14700</b>	<b>ln.ft</b>
SEGMENT	5 Left Side	1209+50	1210+50	100	100	Fills > 50'
SEGMENT	5 Right Side	1209+50	1210+50	100	200	Fills > 50'
SEGMENT	5 Left Side	1301+50	1311+50	1000	1200	Fills > 50'
SEGMENT	5 Right Side	1304+50	1309+50	500	1700	Fills > 50'
SEGMENT	5 Left Side	1314+50	1316+50	200	1900	Fills > 50'
SEGMENT	5 Left Side	1334+50	1337+50	300	2200	Fills > 50'
SEGMENT	5 Left Side	1376+50	1379+50	300	2500	Fills > 50'
SEGMENT	5 Left Side	1387+50	1394+50	700	3200	Fills > 50'
SEGMENT	5 Left Side	1417+50	1418+50	100	3300	Fills > 50'
SEGMENT	5 Left Side	1454+50	1465+50	1100	4400	Fills > 50'
SEGMENT	5 Left Side	1485+50	1492+50	700	5100	Fills > 50'
<b>Subtotal:</b>	<b>5</b>			<b>Say</b>	<b>5100</b>	<b>ln.ft</b>
						31200 Each

Roadway Signage - Allowance | Mile | | |

Coffman Cove Schedule B, 2003				Engineers Estimate		SE Road Builders		Kiewitt Pacific Co.		Secon	
Item #	Item Unit	Description	Quantity	Unit Price	Amount	Unit Price	Amount	Unit Price	Amount	Unit Price	Amount
63302	m <sup>2</sup>	Sign installation	70.00	\$500.00	\$35,000.00	\$494.00	\$34,580.00	\$1,000.00	\$70,000.00	\$500.00	\$35,000.00
63507	m <sup>2</sup>	Construction sign	136	\$200.00	\$27,200.00	\$158.00	\$21,488.00	\$100.00	\$13,600.00	\$150.00	\$20,400.00
			206.00								
63308	each	Removing and resetting signs	1	\$200.00	\$200.00	\$1,000.00	\$1,000.00	\$150.00	\$150.00	\$500.00	\$500.00

(Common price in bid tabs)

Coffman Cove (1)

Ave. Units Total

\$500 70 m2 \$35,000

753.4737 sq.ft \$46 per sq ft  
Say \$50 per sq ft

70 m2 for 15.785 km (total project length for Coffman Cove (1))  
Ave. sign area = 0.5  
140 signs

14.2735608  
Say 15 signs per mile

753.4737 sq.ft for 9.8083444 miles (total project length for Coffman Cove (1))  
\$3,840.98

Say \$5,000 per mile for signage

Pavement Stripping and Markings - Allowance

Mile

Coffman Cove Schedule B, 2003				Engineers Estimate		SE Road Builders		Kiewitt Pacific Co.		Secon	
Item #	Item Unit	Description	Quantity	Unit Price	Amount	Unit Price	Amount	Unit Price	Amount	Unit Price	Amount
63401A	m	Pavement markings, type M, solid white	29,900	\$5.00	\$149,500.00	\$4.14	\$123,786.00	\$2.75	\$82,225.00	\$3.00	\$89,700.00
63401 B	m	Pavement markings, type M, solid yellow	26,600	\$5.00	\$133,000.00	\$4.12	\$109,592.00	\$2.75	\$73,150.00	\$3.00	\$79,800.00
63401 C	m	Pavement markings, broken yellow	3,900	\$4.00	\$15,600.00	\$4.12	\$16,068.00	\$2.75	\$10,725.00	\$3.00	\$11,700.00
			60,400		\$298,100.00		\$249,446.00		\$166,100.00		\$181,200.00
63406	each	Pavement markings, type M, Stop line	1	\$1,000.00	\$1,000.00	\$295.00	\$295.00	\$1,000.00	\$1,000.00	\$300.00	\$300.00
63410	each	Recessed pavement markers	1,300	\$35.00	\$45,500.00	\$35.35	\$45,955.00	\$25.00	\$32,500.00	\$20.00	\$26,000.00

(Common price in bid tabs)

Coffman Cove (1)

Ave. Units

Total

\$5 60400 m

\$302,000

198162.7 ln ft

\$2 per ln ft

Say

\$2 per ln ft

Coffman Cove used a very expensive pavement marking.

Say

5250 ft in 1 mile and

6 applications at

\$0.60 per ln ft =

\$3.60

2 applications for 2 fog lines and 1 centerline

Say

\$5 per ln ft or

\$26,250 per mile

Say

\$25,000 per mile